REMARKS

Re-examination and allowance of the present invention is respectfully requested.

Applicants respectfully traverse the Examiner's 35 U.S.C. §103(a) rejection of claims 2-25 as being obvious over U.S. Patent 5,826,226 to OZAWA in view of U.S. Patent 5,293,449 to TZENG. In particular, Applicants submit that the prior art combination suggested by the Examiner neither teaches, nor suggests Applicants' invention, as defined by the pending claims.

In setting forth the 35 U.S.C. §103 rejection, the Examiner acknowledges that OZAWA fails to disclose/suggest several features of Applicants' invention, but then precedes to state that the features lacking in OZAWA may be found in TZENG.

Applicants respectfully traverse the Examiner's assertion that the combination of OZAWA and TZENG results in Applicants' invention. For example, the Examiner asserts that the storage of residuals in TZENG corresponds to Applicants' fixed waveforms. Applicants submit that this assertion is erroneous.

In TZENG, the term "residual" refers to a signal used in a process that searches for an optimum excitation signal for a CELP encoder that performs speech coding. In particular, the residual signal in TZENG refers to a signal that is used to generate a target signal in a codebook search process. Moreover, Applicants submit that it is known in the art of CELP speech coding that while an encoding process requires residual signals, such is not the case with a decoder process. As the instant invention is directed to a decoder, Applicants submits

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there is a distinction between TZENG's residual signal and the fixed waveform of the instant invention.

Further, Applicants submit that it is well known by those skilled in the art that when a speech signal is input in an encoder process, dynamic changes occur to the input speech signal. The dynamic changes to the input speech signal may occur on a per frame (or sub-frame) interval basis. As a result, a target signal in a codebook search process that is generated from the residual signal may also dynamically change.

Accordingly, Applicants submit that the phrase "storage of residual", as employed by TZENG, refers to the storing of residual signals in a memory on a temporary basis immediately before execution of a codebook search.

Applicants note that the present invention is directed to "fixed" waveforms. Thus, even if a change with a speech signal occurs on a per frame (or sub-frame) basis, the changes will have no influence (affect) on the stored fixed waveforms of the present invention. Applicants submit that this provides a further distinction between the residual signal in TZENG and the instant invention.

The Examiner also asserts (in the Office Action) that it is well known in the art of CELP designs to employ a fixed codebook. Applicants acknowledge that CELP speech coding generates a non-periodic component (e.g., a non-periodic component vector) in an excitation vector using a fixed codebook along with an adaptive codebook that generates a periodic component (e.g., a periodic component vector) in the excitation vector. Applicants

also submit that the random codebook of the present invention generates a non-periodic

component that is used with an adaptive codebook. However, Applicants submit that a

typical fixed codebook is equivalent to the random codebook (and not the fixed waveform

storage system) of Applicants' invention.

Further, Applicants submit that their method to generate a non-periodic component

of a random codebook differs from one of a typical fixed codebook. In a typical fixed

codebook, a fixed codebook vector corresponding to a specific index is read out from the

fixed codebook. The read out vector is then output as is as a vector representing a non-

periodic component. On the other hand, in the random codebook of the present invention,

when a specific index is supplied, the input vector providing system makes reference to a

table (e.g., Table 8 in Applicants' specification) and acquires pulse information

corresponding to the index, and supplies an input vector that is based on this pulse

information. A convolution system convolutes the above input vector and the above-

described fixed waveforms stored in a fixed waveform storage system to output an excitation

vector that represents a non-periodic component.

In view of the above, Applicants submit that even if one attempted to combine

OZAWA and TZENG in the manner set forth by the Examiner, one would fail to arrive at

the instant invention, as such a combination would include (using claim 10 as an example)

a synthesis filter that receives a signal based on an adaptive code vector and a random code

vector, and convolutes between an impulse response of the synthesis filter and the signal to

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generate a synthesized speech, but would not include a convolution system that convolutes the above input vector and the above-described fixed waveforms stored in a fixed waveforms storage system to output an excitation vector that represents a non-periodic component. Accordingly, Applicants submit that the present invention, as defined by the pending claims, is distinguishable from the prior art applied by the Examiner. Thus, the Examiner is respectfully requested to withdraw the 35 U.S.C. §103(a) rejection, to indicate the allowability of the pending claims, and to pass the application to issue.

Pursuant to M.P.E.P. §714.13, Applicants contend that entry of the present amendment is appropriate because the proposed amended claims avoid the rejection set forth in the last Office Action, resulting in the application being placed in condition for allowance, or, alternatively, the revised claims place the application in better condition for purposes of appeal. Further, the amendment does not present any additional claims for the Examiner's consideration, and the revised claims do not present any new issues that would require any further consideration or search by the Examiner. In this regard, Applicants note that the revisions to the claim correspond to features argued in the last response, and thus, they do not present new issues. Accordingly, entry of the present amendment is respectfully requested.

SUMMARY AND CONCLUSION

In view of the fact that none of the art of record, whether considered alone or in the combination suggested by the Examiner, discloses or suggests the present invention as
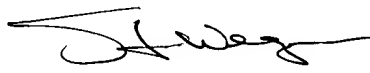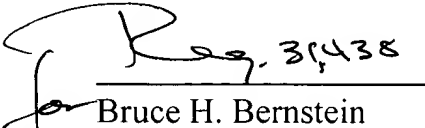
defined by the pending claims, and in further view of the above amendments and remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

Should an extension of time be necessary to maintain the pendency of this application, including any extensions of time required to place the application in condition for allowance by an Examiner's Amendment, the Commissioner is hereby authorized to charge any additional fee to Deposit Account No. 19-0089.

If there should be any questions concerning this application, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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